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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/129,113

08/04/1998

JAMES F. CAMERON

50349

4003

53884

7590

10/17/2008

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MARLBOROUGH, MA 01752

EXAMINER

WALKE, AMANDA C

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

10/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/129,113	Applicant(s) CAMERON ET AL.	
	Examiner Amanda C. Walke	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43,45-49 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 43, 45-49, and 51-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. Claims 43, 45-49, and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over SINTA et al. (US 5,731,364) in view of Doessel et al (4,946,759).

a. SINTA et al teach a photoresist composition comprising a resin binder and a photoactive component, the photoactive component comprises a plurality of distinct aryl sulfonium photoactivatable compounds (claim 1). The photoactive cation is preferably a di-cation compound, particularly compound of formula VI wherein R is the same or different and is a substituted or unsubstituted aryl group and each Q is a sulfonate or carboxylate anion (column 3, lines 24-38). When substituted, the R groups are substituted at one or more available positions by halogens, alkyl groups, alkoxy groups, alkenyl groups, aryl groups (column 5, lines 39-60). Suitable counter ions are given in column 4, line 28 - column 6, line 51, which include benzylsulfonate, C₁₋₁₂ alkyl sulfonates such as mesylate, aryl tosylates and halogenated alkyl sulfonates such as triflate. The photoactive sulfonium compound meets the present limitations for the sulfonium photoacid generator. The resin binder has functional groups that impart alkaline aqueous developability to the resist composition. Preferable resin binders comprise polar functional groups such as hydroxyl or carboxylate (column 7, line 38 - 50). A substituted ester moiety, taught as a suitable acid labile group of the resin is described in column 9, lines 23-27. Preferred acid labile moieties are acetate groups including t-butyl acetate, acetals and ketals (column 9, lines 44 - 49). The resin binder comprising an acid labile group meets the present limitations for the component that comprises photoacid-labile groups. A resist can be prepared by dissolving the components of the photoresist in a suitable solvent such as propylene glycol

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monomethyl ether and lactates such as ethyl or methyl lactate (column 11, lines 10-26). SINTA et al. further teach that the photoresists may be applied to a substrate in liquid form (column 11, lines 27-32).

b. Therefore it would have been *prima facie* obvious to make a photosensitive composition comprising a binder resin with acid labile groups and a di-cation sulfonium photoacid generator comprising a sulfonate counter anion and to coat the composition on a microelectronic wafer to obtain a photoresist with excellent lithographic properties that can be used in accordance with known procedures based on the teachings of SINTA et al. (column 3, lines 38-42 & column 11, lines 27-41).

Solvents such as propylene glycol monomethyl ether, glycols, and lactates may be employed as well as other known resist solvents, however, propylene glycol monomethyl ether acetate is not specifically mentioned.

Doessel et al is just one of many examples teaching that positive resist solvents that are well known in the art include glycols, ketones, lactates, propylene glycol monomethyl ether and propylene glycol monomethyl ether acetate (column 7, paragraph 3).

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of the reference choosing to employ the solvent of Doessel et al.

Response to Arguments

3. Applicant's arguments filed 6/30/08 have been fully considered but they are not persuasive. Applicant has again argued that the Sinta reference fails to teach a triphenyl

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sulfonium (one of the most widely known and used photoacid generators), having a counter ion that is an aryl or alicyclic sulfonate substituted with an electron withdrawing group. Sinta clearly describes triphenyl sulfonium PAGs having counter ion such as arylsulfonates having F atoms, which are electron withdrawing groups (trifluoromethylbenzenesulfonate; example 1d or acetamidobenzenesulfonate; column 4, line 55, amongst others see columns 4 and 5). Applicant has pointed to the examples of the specification to demonstrate that unexpected results are obtained by the counter ions of the invention however, the comparative examples compare triphenyl sulfonium compounds to di-phenyl, and demonstrate that photospeed over time diminishes for the compositions comprising the di-phenyl compounds, but the results are unpersuasive,. The materials of the reference employ the triphenyl sulfonium compounds and teach that the lithographic properties (which includes, photospeed, sensitivity, storage and light stability, etc.) of the composition including *photospeed* are "excellent" and improved by employing the photoacid generators of the reference thus, the examples of the instant specification are showing the expected result based upon the teachings of the reference (abstract, column 1, lines 9-52). Therefore the rejections based upon Sinta are again maintained.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C. Walke whose telephone number is 571-272-1337. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amanda C Walke
Primary Examiner
Art Unit 1795

/Amanda C Walke/
Primary Examiner, Art Unit 1795

Application Number 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/129,113	CAMERON ET AL.	
	Examiner	Art Unit	
	Amanda C. Walke	1795	